

August 17, 1996

John Meyer  
United States Environmental Protection Agency  
1200 Sixth Avenue, ECL-115  
Seattle, WA 98101

Re: Contract No. 68-W6-0008, Technical Direction Document No. 96-03-0021-B  
Alaska Wood Gasifier Preliminary Assessment

Dear John:

Enclosed please find the abbreviated Preliminary Assessment (PA) report you requested for the Alaska Wood Gasifier Site located in Anchorage, Alaska. Available information indicates that the contaminant source was removed and properly disposed in 1985. Soil and groundwater sampling data collected following cleanup revealed no evidence of impact to soils and groundwater resulting from past practices associated with the Alaska Wood Gasification Development Site.

This Technical Direction Document is now closed. If you have any questions regarding this PA, please call me at 206/624-9537.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Michael Martin  
Project Manager

cc: Gary Sink, U.S. EPA Contract Officer, Seattle, WA (ECL-116) (letter only)  
William Carberry, E & E START Program Manager, Seattle, WA (letter only)

PRELIMINARY ASSESSMENT  
ALASKA WOOD GASIFIER SITE  
ANCHORAGE, ALASKA

START REGION X

Contract No. 68-W6-0008  
Technical Direction Document No. 96-03-0021-B

August 1996

Prepared By:

ECOLOGY AND ENVIRONMENT, INC.  
1500 First Interstate Center  
999 Third Avenue  
Seattle, Washington 98104

Prepared For:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PRELIMINARY ASSESSMENT  
ALASKA WOOD GASIFIER SITE  
ANCHORAGE, ALASKA

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION .....	1-1
2 SITE BACKGROUND .....	2-1
2.1 Site Location .....	2-1
2.2 Site Description .....	2-2
2.3 Site Operations and Waste Characteristics .....	2-2
2.3 Site Investigations .....	2-6
3 ENVIRONMENTAL SETTING .....	3-1
3.1 Topography .....	3-1
3.2 Geology and Hydrogeology .....	3-1
4 REFERENCE LIST .....	4-1

ATTACHMENT A - PHOTO DOCUMENTATION

## LIST OF ILLUSTRATIONS

<b>Figure</b>		<b>Page</b>
2-1	Site Location Map . . . . .	2-3
2-2	Highland Subdivision Map . . . . .	2-4
2-3	Site Map (As it appeared in August 1985) . . . . .	2-5

## 1.0 INTRODUCTION

Ecology and Environment, Inc., (E & E) has been tasked by the U.S. Environmental Protection Agency (EPA) to provide technical support for completion of a Preliminary Assessment (PA) at the former Alaska Wood Gasifier site in Anchorage, Alaska. E & E completed PA activities under Technical Direction Document No. 96-03-0021-B, issued under EPA Region X Superfund Technical Assessment and Response Team (START) Contract Number 68-W6-0008. Specific goals for the Alaska Wood Gasifier PA identified by EPA are presented below:

- C Determine the potential threat to public health or the environment posed by the site;
- C Determine the potential for a release of hazardous constituents into the environment;  
and
- C Determine the potential for placement of the site on the National Priorities List (NPL).

Completion of the PA included reviewing existing site information, conducting a site visit, acquiring other available necessary data, interviewing persons knowledgeable of the site, and determining regional characteristics. This document includes a discussion of background site information ([Section 2](#)); a discussion of site's environmental setting ([Section 3](#)); and references ([Section 4](#)).

## **2.0 SITE BACKGROUND**

### **2.1 SITE LOCATION**

Site Name:	Alaska Wood Gasifier
CERCLIS ID No.:	AK4891490027
Location:	Portion of Tract A, Highland Subdivision Klatt Road and Gambell Street Anchorage, Alaska 99511
Latitude:	61°6'5.7" North
Longitude:	149°52'2.2" West
Legal Description:	Portion of Section 19, Township 12 North, Range 3 West, Seward Meridian, Alaska
Site Owner/Operator:	Frontier Paving P.O. Box 113088 Anchorage, Alaska 99511 (907) 345-7623
Former Owner:	Harold Soule (G & J Flooring) (206) 345-0526
Site Contacts:	Phill Platt, Owner Frontier Paving P.O. Box 113088 Anchorage, Alaska 99511 (907) 345-7623  Gregory Baesler Hazardous Waste Coordinator Bonneville Power Administration P.O. Box 3621 Portland, Oregon 97208 (503) 230-7637

Peter Crimp  
Alaska Department of Community and Regional  
Affairs, Alaska Division of Energy  
Anchorage, Alaska  
(907) 269-4631

## **2.2 SITE DESCRIPTION**

The former Alaska Wood Gasifier site (now owned by Frontier Paving) is located in a light industrial-zoned area of south Anchorage, Alaska (Figure 2-1). The property consists of a 1-acre portion of Tract A in the Highland Subdivision, southwest of the intersection of Klatt Road and Gambell Street (Figure 2-2). In 1967, Harold Soule (G & J Flooring) bought all of Tract A (which was completely undeveloped at that time) as a site for his flooring business. Two corrugated metal structures were built on the northern lots of Tract A between 1968 and 1970 and were used as warehouses to store flooring materials. The south structure was also used as a truck repair shop (Gilfilian Engineering, Inc., 1992) and was later used by Marengo, Inc. as a shop for the Wood Gasification Project (Figure 2-3 is a map of the site as it appeared in 1985).

In 1992, the south structure (and adjacent land to the south) was purchased by Phill Platt of Frontier Paving. The warehouse is now utilized as a truck repair shop. The lot south of the warehouse is used as a parking lot for the paving trucks.

The Frontier Paving structure is connected to a septic tank system and a 36 inch sewer line is buried along the west property boundary parallel to the Alaska Railroad right-of-way. The property is not connected to the municipal water or sewer system.

The general site area is bounded to the north by Klatt Road, to the south by a crane company, to the east (across Gambell Street) by light industrial businesses, and to the west by Alaska Railroad right of way and a cemetery.

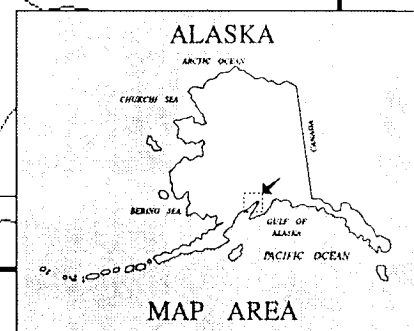
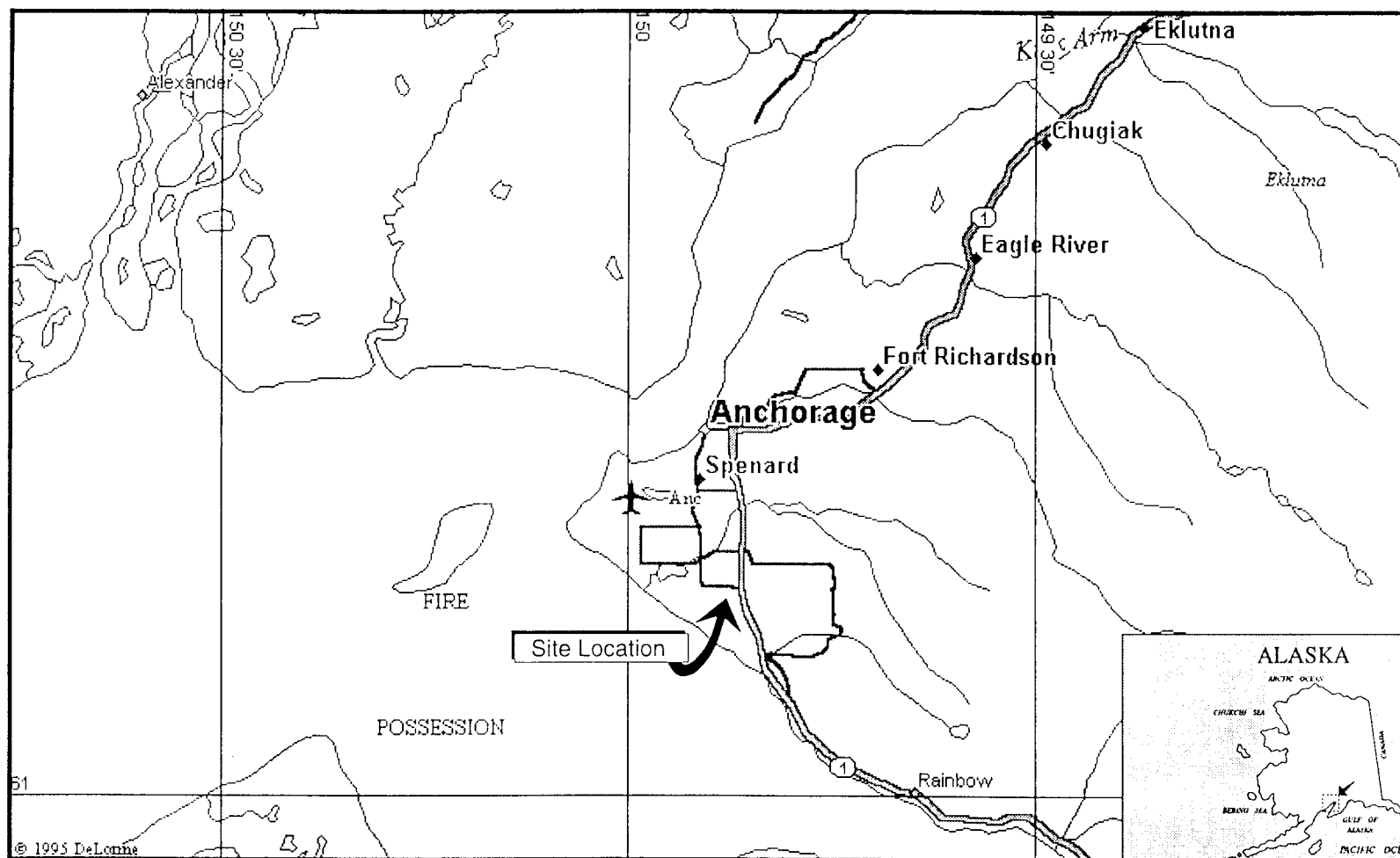
A Chugach Electric Substation has occupied the northeast corner of Tract A since approximately 1978.

## **2.3 SITE OPERATIONS AND WASTE CHARACTERISTICS**

The Alaska Wood Gasification Project was a jointly funded State of Alaska and U.S. Department of Energy (USDOE) effort initiated in July 1980 under former USDOE Region 10 program management. Program management for the site was transferred to the Bonneville Power Administration (BPA) in the fall of 1981 (USDOE, 1985a). The project was terminated in the spring of 1983 (Chase, 1985).

Activities conducted on this site included the design, testing, and development of a down draft wood gasification system to generate electrical energy. The project objective was to develop a system, to be implemented in the remote villages of interior Alaska, that would use local biomass resources as a fuel. All design, testing and development work was conducted by Marengo, Inc. (Mr. Joe Marks, President), with project management responsibilities held by the





**ecology and environment, inc.**  
International Specialists in the Environment  
Seattle, Washington

# ALASKA WOOD GASIFIER SITE ANCHORAGE, ALASKA



0 2.5mi 5mi  
SCALE: 1"=5miles

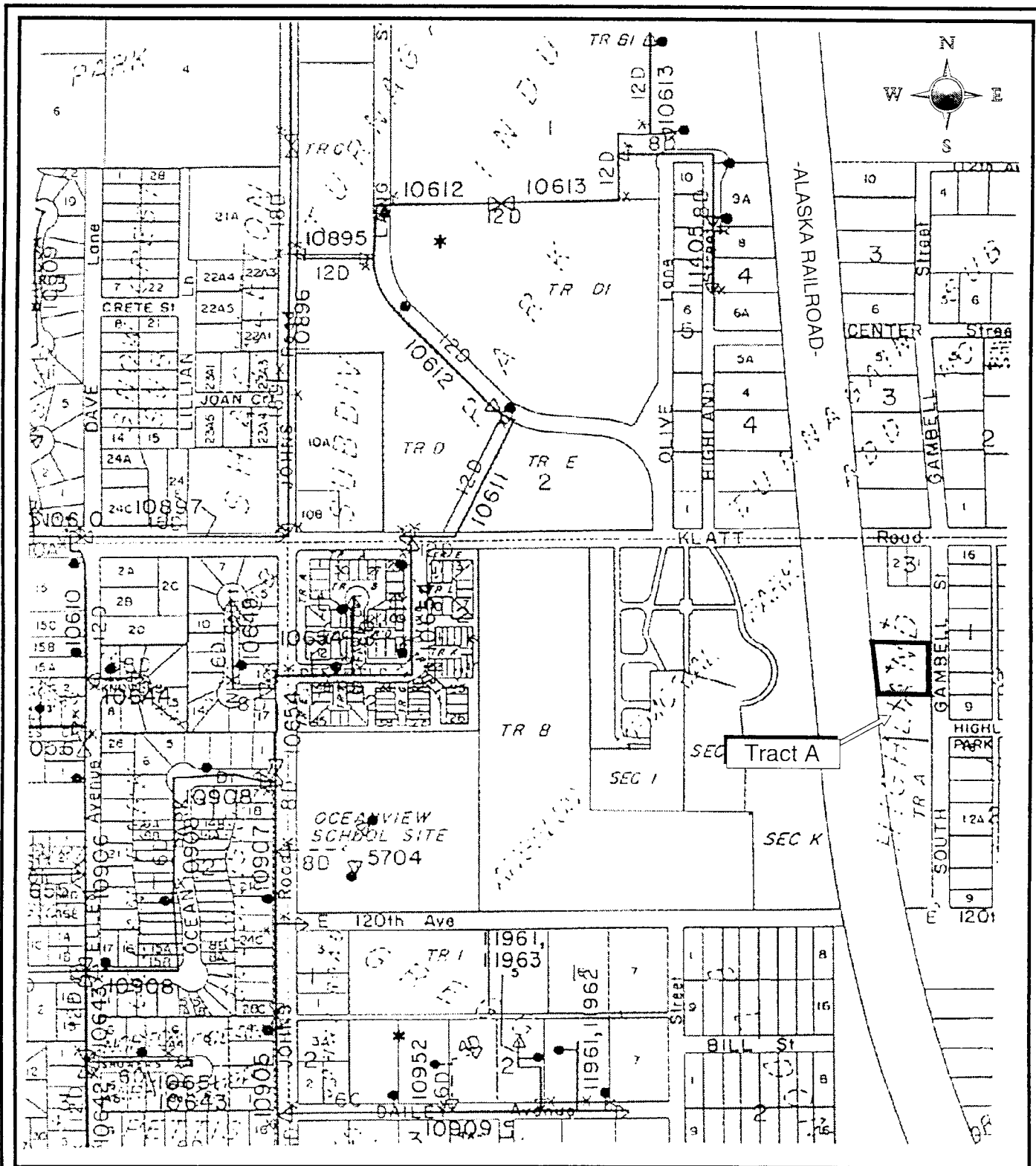
Figure 2-1  
SITE LOCATION MAP

Drawn By:  
MRE

Date  
6-12-96

TDD/Job No.  
96-03-0019-A

Dwg. No.  
KJ0100



SCALE: 1" = 500' APPROX.

Ref.: Giffilian Engineering, Inc.  
Tract A, Highland Subdivision, Anchorage, Alaska - Site Location Map

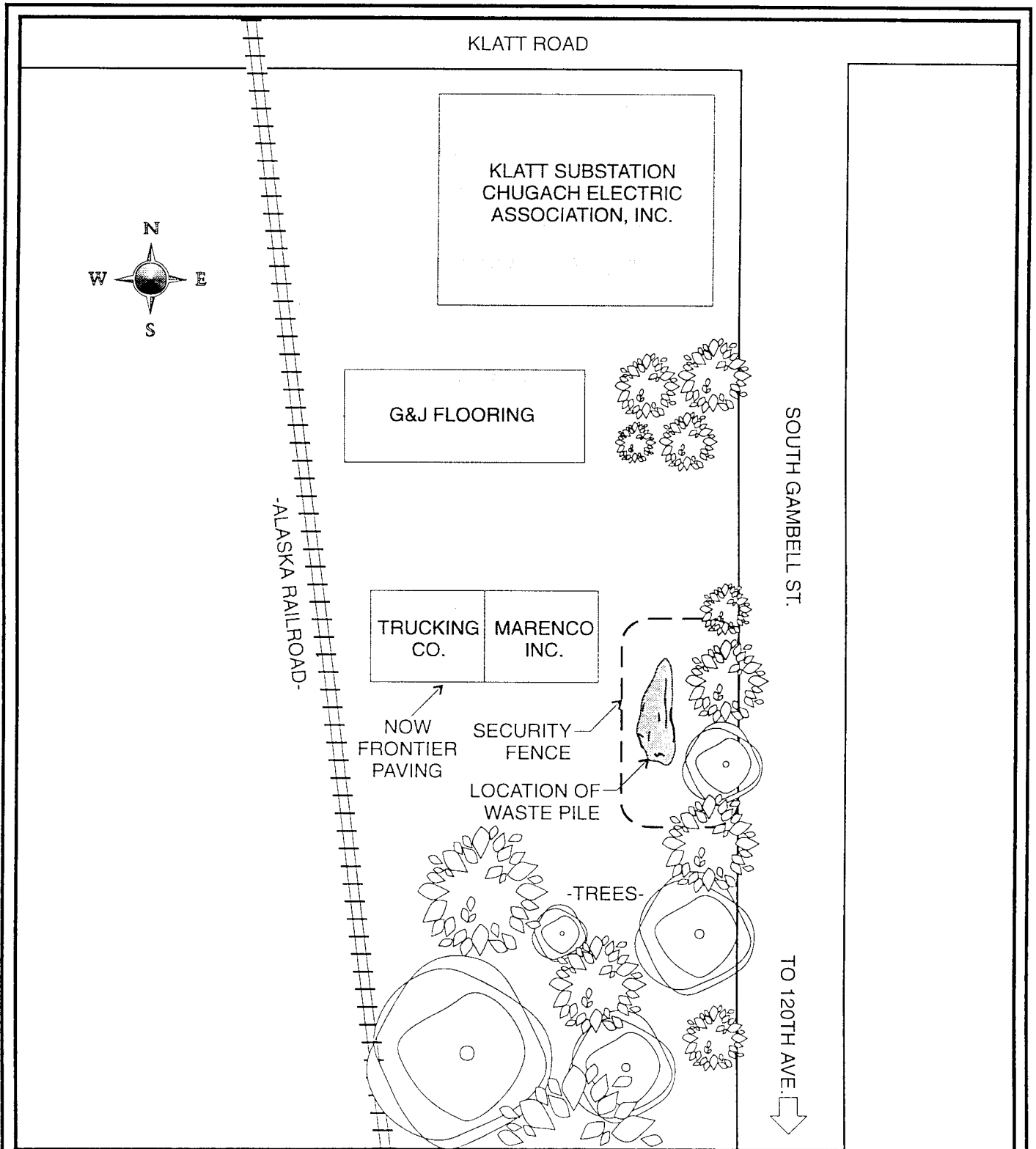


**ecology and environment, inc.**  
International Specialists in the Environment  
Seattle, Washington

ALASKA WOOD GASIFIER SITE  
ANCHORAGE, ALASKA

Figure 2-2  
HIGHLAND SUBDIVISION MAP

Drawn By: MRE	Date 06-18-96	IDD/Joo I.O 96-03-00:9-A	Dwg. No KJ0100
------------------	------------------	-----------------------------	-------------------



NO SCALE USED



**ecology and environment, inc.**  
International Specialists in the Environment  
Seattle, Washington

ALASKA WOOD GASIFIER SITE  
ANCHORAGE, ALASKA

Figure 2-3  
SITE MAP  
(AS IT APPEARED IN  
AUGUST 1985)

Drawn By: MRE	Date 06-18-96	TDD/Joo No. 96-03-0019-A	Dwg. No. KJ0100
------------------	------------------	-----------------------------	--------------------

State of Alaska, Department of Commerce and Economic Development, Division of Energy and Power Development, and the Alaska Village Electric Cooperative, Inc. (Chase, 1985).

In 1985, after a period of inactivity, BPA sent personnel to Anchorage to dismantle the wood gasification and power generation system equipment and arrange shipment off site. The equipment was to be transported to Golden, Colorado to other test facilities and utilization on other projects. The equipment was removed from the warehouse (Marenco, Inc.) by late February 1985 (USDOE, 1985b).

During the dismantling of the wood gasification equipment, a considerable amount of liquid, semi-liquid, and solid gasifier waste was discovered on the property. The waste contained creosote - wood tar and related chemical agents (benzo(a)pyrene and phenols) classified as hazardous waste by the EPA (see photos included in [Attachment A](#) taken by an EPA representative in 1985). The waste was contained in various system holding tanks, open and closed 55-gallon drums, open tanks located in the warehouse, and in a waste (ash) pile east of the warehouse near the trees ([Figure 2-3](#)). The waste gave off vapors causing various toxic reactions among the BPA team members dismantling the equipment and limiting the use of the adjoining truck shop facilities (EPA, 1985).

## **2.4 SITE INVESTIGATIONS**

Bonneville Power Administration hired Crowley Environmental Services (Crowley) to conduct site characterization (sampling) and cleanup activities at the Alaska Wood Gasifier site in the spring of 1985. At the request of EPA, samples were collected from the waste pile and containers in early March 1985 to characterize contaminants. Standard EPA toxicity tests were conducted for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, corrosivity (pH), flammability, and reactivity. According to test results, only lead contaminant levels in some of the samples surpassed the EPA regulatory guideline limit (USDOE, 1985b). Samples from the waste sources (tanks, waste pile) were also analyzed for phenol, cresol (o,m,p), benzene, toluene, methyl ethyl ketone, pyridine, and benzo (a) pyrene. All samples were analyzed at Chemical and Geological Laboratories of Alaska, Inc. using standard 1985 analytical methods. Test results revealed elevated levels of phenol, cresol, benzene, and toluene in a tank containing liquid waste inside the warehouse. Because contaminant levels were above regulatory agency limits in some instances, the waste was classified by EPA under 40 CFR 261 as a hazardous waste and proper removal and disposal was required (under guidance from EPA).

A total of 142 55-gallon drums of solid and liquid wastes were compiled for removal during the cleanup. According to waste manifest forms completed by Crowley in December of 1985, three forty foot trailer loads of hazardous waste were manifested and transported by B & R Environmental Company to a disposal facility in Idaho (Crowley Environmental Services, 1985).

Following cleanup activities by Crowley, confirmation soil core samples were collected from beneath areas where hazardous waste had been removed. Samples were collected from 0 to 2 feet bgs and other varying depths. Samples were analyzed for contaminants listed above (in discussion of waste source sampling). According to laboratory data, no evidence of hazardous substances were found (USDOE, 1985c).

The EPA requested that domestic water supply wells in close proximity to the former gasifier site be sampled and analyzed to ensure that groundwater had not been impacted. Five downgradient wells in close proximity were sampled and analyzed for priority pollutants in accordance with Test Methods for Evaluating Solid Waste, Method 8240 at Laucks Testing Laboratories, Inc., Seattle, Washington. Jack Guzman of EPA Region 10 approved the sampling plan prior to implementation. According to information and analytical data, no detection of site related contaminants were found in the water wells (Alaska Power Authority. 1986).

A site visit was conducted in June, 1996 by the START to observe current site conditions, interview current owners, and gather any pertinent site information. No potential sources of hazardous waste were observed. The current owner of the property, Frontier Paving, provided a copy of a Phase I Environmental Site Assessment Report (Gilfilian, 1992) that was performed prior to purchase of the site. The report concluded that no environmental concerns could be identified associated with the property. There was no mention of the Alaska Wood Gasifier project in the report.

### **3.0 ENVIRONMENTAL SETTING**

#### **3.1 TOPOGRAPHY**

The topography of the site area is relatively flat with a slight slop to the southwest. Several light industrial firms are presently located across Gambell Street, which is slightly upgradient of the subject property. Storm water runoff would likely flow from these sites onto the site. The nearest body of water is Turnagain Arm, which is an extension of Cook Inlet. It is located approximately 1.75 miles southwest of the site.

#### **3.2 GEOLOGY AND HYDROGEOLOGY**

A water well, approximately 100 feet deep, is located on the northeast portion of the property. In addition, several other water wells are located east of Gambell Street, and west of the railroad right-of-way with depths from 64 to 230 feet below ground surface (bgs) (DNR, 1985). Geologic conditions can vary considerably between sites in the area. According to the drilling log associated with the on site well (M-W Drilling, Inc., 1993), soils were described as the following:

<b>Depth</b>	<b>Description</b>
0 to 2 feet	Gravel fill
2 to 8 feet	Brown sandy gravel
8 to 12 feet	Green sand
12 to 20 feet	Green silty sand with water
20 to 23 feet	Gray silty sand
23 to 40 feet	Gravel and clay
40 to 61 feet	Clayey silty gravel with cobbles
61 to 79 feet	Gravelly sand/wet
79 to 90 feet	Water, gravel
90 to 93 feet	Boulders
93 to 100 feet	Gravel, water

The water well log indicated a static water level of approximately 31 feet bgs. The water table for most of the area varies from 19 to 40 feet bgs (Chase, 1985).

The exact direction of groundwater movement in the subject area is unknown. However, according to a 1974 U.S. Geological Survey Open-File Report titled "Water-table contour map, Anchorage, Alaska", a general westward flow direction is indicated. The water table contours are based on reported water levels in wells developed in the shallow ground water aquifer (DNR, 1985).

#### 4.0 REFERENCE LIST

- Alaska Department of Natural Resources (DNR), 1985, Division of Geological and Geophysical Surveys, Memorandum regarding groundwater information pertaining to the Alaska Wood Gasification Site Area.
- Alaska Power Authority, 1986, Letter, Sampling Plan, and attached laboratory analytical data (Chemical and Geological Laboratories of Alaska, Inc.) from water tests conducted at nearby water wells in the vicinity of the Wood Gasifier Site.
- Chase, Craig, Biomass Energy Systems & Energy Resource Management Consultant, 1985, Gasifier Site Characterization and Sampling Plan.
- Crowley Environmental Services Corporation, 1985, letter/manifests to EPA regarding shipment of hazardous waste to Idaho disposal site, manifests included, Alaska Wood Gasifier Site, Anchorage, Alaska.
- Gilfilian Engineering, Inc., October 13, 1992, Phase I Environmental Site Assessment for a 1-acre portion of Tract A, Highland Subdivision, Anchorage, Alaska.
- M-W Drilling, Inc., 1993, Drilling Log of Lot 3A and 4A of Highland Subdivision (Subject Property) for commercial use by G & J Flooring (Harold Soule, Owner), Anchorage, Alaska.
- U.S. Department of Energy (USDOE), April 5, 1985a, Report of Hazardous Waste, Pacific Northwest and Alaska Bioenergy Program, USDOE Involvement in the Alaska Wood Gasification Project.
- \_\_\_\_\_, August 2, 1985b, letter to Crowley Environmental Services, Inc. concerning initial testing of soils for EPA toxicity tests.
- \_\_\_\_\_, October 1985c, letter and lab results from confirmation soil samples collected beneath waste removal area.
- U.S. Environmental Protection Agency (EPA), 1985, letter by EPA representative who conducted site visit and assessment of the Alaska Wood Gasifier site, Anchorage, Alaska.



**ATTACHMENT A**  
**PHOTO DOCUMENTATION**

### PHOTOGRAPH IDENTIFICATION SHEET

TDD #: 96-03-0021-B

Site Name: Alaska Wood Gasifier

Photo	Date	Time	By	Description
1	5/30/85	NA	EPA	Looking west towards Marengo, Inc. warehouse(former site of gasifier equipment).
2	5/30/85	NA	EPA	Looking west between Marengo, Inc. warehouse and G&J Flooring warehouse (owned by Harold Soule).
3	5/30/85	NA	EPA	Looking towards the southwest and location of former waste pile (located on other side of trees).
4	5/30/85	NA	EPA	Looking south towards debris and ash pile generated from Wood Gasifier site.
5	5/30/85	NA	MM	Close-up of ash waste pile found during original inspection of site.
6	6/5/96	1015	MM	Looking west toward site entrance and Frontier Paving warehouse (former location of stored liquid waste).
7	6/5/96	1020	MM	Looking northwest at the recently acquired mobile home office owned by Frontier Paving.
8	6/5/96	1022	MM	Looking along southeast side of property which is presently used as parking space for employee vehicles and paving trucks.
9	6/5/96	1025	MM	Parking area south of the Frontier Paving warehouse.
10	6/5/96	1030	MM	Looking north toward the Frontier Paving warehouse (note that many trees have been removed since 1985).

EPA - Environmental Protection Agency

MM - Michael Martin

NA - Not Available